

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 01 MAR 2005

PCT PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

To:
PARK, Hyeong-Keun

GAIN INTERNATIONAL PATENT & LAW FIRM Room
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Date of mailing
(day/month/year) 24 FEBRUARY 2005 (24.02.2005)

Applicant's or agent's file reference GAPCT1218	FOR FURTHER ACTION See paragraph 2 below	
International application No. PCT/KR2004/002265	International filing date (day/month/year) 07 SEPTEMBER 2004 (07.09.2004)	Priority date(day/month/year) 14 JANUARY 2004 (14.01.2004)
International Patent Classification (IPC) or both national classification and IPC IPC7 F23N 5/02		
Applicant CNTEK, CORP. et al		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR

 Korean Intellectual Property Office
 920 Dunsan-dong, Seo-gu, Daejeon 302-701,
 Republic of Korea
 Facsimile No. 82-42-472-7140

Authorized officer
 PARK, HYUN SOO
 Telephone No. 82-42-481-8114



**WRITTEN OPINION OF THE
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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material
 in written format
 in computer readable form
 - c. time of filing/furnishing
 contained in the international application as filed.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- the entire international application
 claims Nos. 3 - 10

because:

- the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international preliminary examination (specify):

- the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 3 - 10 are so unclear that no meaningful opinion could be formed (specify):

See Supplemental Box

- the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.
 no international search report has been established for said claims Nos. _____
 the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

- has not been furnished
 does not comply with the standard.

the computer readable form

- has not been furnished
 does not comply with the standard.

- the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

- See Supplemental Box for further details.

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Box No. IV Lack of unity of invention

1. In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
 - paid additional fees
 - paid additional fees under protest
 - not paid additional fees
2. This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is:
 - complied with
 - not complied with for the following reasons:

The application does not meet the requirement for the unity of invention set forth in PCT Articles 3(4)(iii), 34(3) and Rule 13.1. It is immediately evident "a priori" that the independent claims relate to two different problems and have little in common.

Claimed invention (i): claims 1 and 2 are directed to a thermally operated valve.

Claimed invention (ii): claims 3–10 are directed to an automatic circulation device of warm water.

While it can be said that the claimed invention (i) is one of the special technical features of the claimed invention (ii), nevertheless, this does not provide a required novel concept in that the claimed invention is known from D1 and D2.

4. Consequently, this opinion has been established in respect of the following parts of the international application :
 - all parts.
 - the parts relating to claims Nos. _____

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1, 2	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1, 2	NO
Industrial applicability (IA)	Claims	1, 2	YES
	Claims		NO

2. Citations and explanations :

Reference is made to the following documents:

D1: EP 55813 A

D2: JP 64-24177 A

Claim 1 is directed to a gas flow rate control valve and claim 2 is directed to a gas flow open/close valve. However, the subject matters of claims 1 and 2 are very much the same in that the valves are thermally operated.

D1 discloses a thermally operated safety-valve for use in a hot-water heating installation, comprising a valve housing having an inlet, an outlet, a closing spring, a seal ring, and a temperature sensor of vapor pressure type.

D2 discloses a heat sensing cylinder-rod actuator comprising a cylinder, a spring, a rod and a volatile evaporating substance.

Novelty

None of the prior art documents D1 and D2 disclose a valve case having an expanded bottom part. Hence, the subject matters of claims 1 and 2 seem to be novel (PCT Article 33(2)).

Inventive Step

The valve case having the expanded part is considered to be a slight constructional change which comes within the scope of the customary practice followed by persons skilled in the art as the advantages thus achieved can readily be foreseen. Consequently, the subject matters of claim 1 and 2 lack an inventive step (PCT Article 33(3)).

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Figures 4 and 9 are not clear. Said figures show that the temperature control valve (50) and the nozzle support (50) have the same reference signs.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

It is understood from the description that a burning control means activated by the temperature of a boiler is essential for the automatic circulation of the present invention but it is not properly described in claim 3. Therefore, claim 3 does not meet the requirements of PCT Article 6 taken in combination with PCT Rule 6.3(b) that any independent claim must contain all the technical features essential to the definition of the invention.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of :

Box No. III

Claim 3–10 are so unclear that no opinion could be formulated as to novelty or inventive step. The problem is that the working of the automatic circulation device of claim 3–10 leaves the reader in doubt. According to the description, the water circulation of the device is caused by the vapor pressure created by heating of the boiler, so no other pressurizing means is needed. But, there is much doubt whether the vapor pressure of the circulation pipes could be increased large enough to render the water circulate because it is described in the description that water in the boiler won't be heated up to 100°C by the function of the gas control valve. Since, a specific volume of water doesn't increase much before boiling, the pressure rise in the boiler of the present invention would result in just a slight change.